

A new northern limit for the distribution of *Arius dasycephalus* (Siluriformes, Ariidae) on the Pacific coast of Mexico

by

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RÉSUMÉ. - Une nouvelle limite septentrionale de l'aire de répartition d'*Arius dasycephalus* (Siluriformes, Ariidae) sur la côte Pacifique du Mexique.

Une nouvelle limite septentrionale de l'aire de répartition d'*Arius dasycephalus* Günther, 1864 est indiquée pour la côte Pacifique du Mexique. Quatre spécimens d'*Arius dasycephalus* ont été capturés au sud et au centre de la côte Pacifique du Mexique, entre 800 et 1700 km au nord de sa répartition connue. Ceci indique que l'aire de répartition d'*A. dasycephalus*, dans cette région, est beaucoup plus vaste que ce qui était mentionné dans la littérature scientifique jusqu'à présent.

Key words. - Ariidae - *Arius dasycephalus* - ISE - Pacific coast of Mexico - Distribution - First record.

Species of *Arius* are demersal fishes inhabiting marine and freshwater environments of tropical and subtropical areas (Nelson, 1994). They are abundant in mangroves and estuaries and are commercially important (Kailola and Bussing, 1995).

Published studies on *Arius dasycephalus* are scarce. This is a marine species that inhabits shallow coastal areas, as well as salt marshes, mangrove areas and coastal lagoons, from Ecuador to Costa Rica (Kailola and Bussing, 1995; Marceniuk and Ferraris, 2003). The caught of four species off the coast of Chiapas and Guerrero, on the central and southern coast of Mexico, is of importance, since these locations are about 800 km and 1700 km respectively, north of its reported northern distribution. In this note we describe our findings for the occurrence of *A. dasycephalus* at these latitudes, which is a noteworthy extension to its distribution in the Pacific.

Three specimens (two males, one female) were caught off the coast of Guerrero during a demersal fish survey carried out by the National University of Mexico, on board the RV El Puma, on the central Pacific coast of Mexico (17°45'00"N; 101°42'00"W, Fig. 1) on April 22, 1982. The specimens were caught over sandy bottoms, using a 25.9 m long otter trawl with 3.9 cm in the cod end that was towed for 30 min. at 2.5 knots, at a depth of 13 m. The temperature was 27.9°C, and the salinity 34.4 ppm. One female specimen was sampled off the coast of Chiapas by the artisanal fishery located at Puerto Madero (14°43'00"N; 92°25'00"W, Fig. 1), on May 19, 2004; this specimen was caught with a seine net. All specimens were stored frozen for further analysis. The specimens were identified in the laboratory and morphometric and meristic characters were taken. Lengths were measured with calipers to the nearest lower mm, and total wet weight was determined to the nearest 0.1 g. Measurements were made according to Kailola and Bussing, 1995.

The specimens were preserved in 70% ethanol after being fixed with 10% formalin, and were deposited in the collection of



Figure 1. - Area and stations (●) where the individuals of *Arius dasycephalus* were collected. [Aires et stations (●) où les individus d'*Arius dasycephalus* ont été capturés.]



Figure 2. - Female (top) (ICMYL 148.4) and male (bottom) (ICMYL 148.2) *Arius dasycephalus* with sexual dimorphism in head shape. [Femelle (en haut) et mâle (en bas) d'*Arius dasycephalus* montrant un dimorphisme sexuel de la forme de la tête.]

fishes of the Instituto de Ciencias del Mar, UNAM, with the catalogue numbers ICMYL 148.1, ICMYL 148.2, ICMYL 148.3, and ICMYL 148.4. Biometric and meristic characters for all specimens are indicated in table I. These characters agreed with the distinctive characters of this species according to Kailola and Bussing (1995). Morphological differences were observed between females

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Table I. - Morphometric and meristic characteristics of the four individuals of *Arius dasycephalus* (ICMYL 148.1 - ICMYL 148.4). [*Caractères morphométriques et méristiques des quatre individus d'Arius dasycephalus.*]

	ICMYL 148.1	ICMYL 148.2	ICMYL 148.3	ICMYL 148.4
Locality	Guerrero	Guerrero	Guerrero	Chiapas
Sex	male	male	female	female
Biometrics (mm)				
Total length	216	233	260	265
Standard length	177	185	210	213
Predorsal length	63	65	68	66
Preal length	117	122	132	135
Head length	45	48	50	50
Eye diameter (horizontal)	9	9	10	10
Snout length	13	13	14	15
Upper jaw length	10	10	11	10
Interorbital width	22	23	28	26
Pectoral fin length	31	37	41	---
Body depth (maximum)	34	37	45	46
Meristics				
First gill arch rackers	5+4	5+4	5+4	5+4
Dorsal fin rays	I-7	I-7	I-7	I-7
Anal fin rays	19	19	19	19
Teeth, vomer	Oval, in two separate series	Oval, in two separate series	Oval, in two separate series	Oval, in two separate series
Supraoccipital process	Triangular, larger than wider	Triangular, larger than wider	Triangular, larger than wider	Triangular, larger than wider

Table II. - Morphological differences between females and males of *Arius dasycephalus*. [*Différences morphologiques entre femelles et mâles d'Arius dasycephalus.*]

Females	Males
Supraoccipital processes with sharp and evident formations	Supraoccipital processes without sharp and evident formations, and covered by skin
Narrow head	Wide head
Anal fin with anterior soft rays long	Anal fin with anterior soft rays short and decreasing regularly in length posteriorly

and males (Tab. II).

The distribution of *Arius* species is poorly known, and data are practically non-existent for *Arius dasycephalus*. The only references concerning the distribution of this species are given by Kailola and Bussing (1995), and by the web-site of FishBase. The distribution records are based on the occurrence of either this species or one of its synonyms in Central and South America (Béarez, 1996; Marceniuk and Ferraris, 2003). Amezcua-Linares (1996) and Madrid *et al.* (1997) reported this species in the Mexican Pacific, however the captured individuals were not deposited in a recognized scientific collection, and enough details on the morphometric and meristic characters of the individuals captured are not given. Therefore, it is not possible to verify if the specimens were correctly identified. Our study demonstrates that *A. dasycephalus* lines further north than its known distribution, reaching to the central and southern coast of Mexico. However, additional surveys are needed to establish its northern limits. This species is probably frequently captured by fishermen in this region, but is unnoticed and/or confused with other more common species.

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